

JWC

*(with comments
by PAB + PD)*

22 January 1961

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MEMORANDUM FOR: Chairman, Technical Development Board

TDB/PA

SUBJECT:

Preliminary Evaluation Comment on
[REDACTED] (Spatial) Aerial Viewer*
25X1A (Aerial Image Viewer) Equipment
(as displayed Jan 61, Bethesda, Md.)

ILLEGIB

I. During past 10 days separate visits were made to view the present equipment and the configuration layout at [REDACTED] Bethesda, Md.,

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office. First visit [REDACTED] second by [REDACTED] observer.

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got more than minimum comparison of ideas between these two [REDACTED] visits was made, nor were reactions compared, as reflected herein, due essentially, to press of time. Likewise, little or no discussion on major points evaluated herein was held with other persons from the Issuing Office/P.I.C. prior to making these DDCI comments. This was done purposely to permit [REDACTED] independent evaluation to result, regardless of other opinion.

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II. None of the (3) DDCI persons to visit [REDACTED] has had the

benefit nor opportunity to see any portion of the [REDACTED] "Report/Study", understood to be part of their total submission.

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The conclusions herein are thus drawn from our visual observations and [REDACTED] verbal statements only. DDCI does have copies of the draft of the "Work Scope" for the Contract by [REDACTED] and the

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associated sub-contractors to them. This 'draft' is deemed to be somewhat obsolete in view of the contract's changes and developments to date! This is an opinion only.

III.

[REDACTED] considers that there may be several restrictions that have been put upon this contract and its work including the level of security clearances granted to [REDACTED] et al (See Appendix for other possible (assumed) restrictions).

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IV. Results of Contract Work to Date INDEX

- A. Application of Favorable Aspects
- B. Comments on Individual Viewing Components and Communication Components (from non-technical stand points).
- C. Comments on Over-All Integrated Component Assembly.
- D. Work Stations Included and application to (Human) Operators.
- E. Other Equipment (Ancillary or per Contract).
- F. Comment on Handling of Bulk Material, Hard Copy and non-projected Collateral.
- G. Integration of Equipment with Future Computer(s) Linkages and Mechanized/Automated Systems.
- H. Comments on Multiple Configuration Layouts if Equipment(s) or Similar Modified Equipment is to be used.
- I. Comment on this Equipment for use as "key" e.g. console as applicable to possible (at month-1963) work loads.

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7. [REDACTED] does not consider it appropriate for us to comment on the details of engineering of electronics, optics or other precision hardware. It is presumed that all "will work".

8. Application of Notable Aspects:

While most of the specific features of the equipment are not original or new, such as the "split-screen" application, the "joy-stick" panel control of cursors, etc., -- the integration of these several desirable features into what is essentially a single console has been neatly accomplished in mock-up form.

The actual panel and instrument display as presented attempts to include in a fairly restricted area, say and all of the needed (or even "mentionable") controls, switching, "read-out", etc. as presently known to be required by the Contractor [REDACTED]. This evidently has been done.

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The ability of the equipment set-up as shown for 2 operators, lends itself quite easily to "utilizing" into either one, two, three or all six separate console components -- i.e., the 2 viewing consoles, the 2 "collateral" consoles -- each of which can be manufactured in 2 sub-consoles if appropriate to work being done. This feature should be retained and/or developed, thus providing for example -- 1 - viewer

for one-man P.I. station, surrounded by as many as 3 - Collateral Supporting consoles or sub-consoles, - a very real possibility. Likewise, the reverse may well be needed at time wherein several Viewers are used in conjunction with minimum collateral (two "random" coverage, etc., etc.).

The rotatable image feature to the extent it is used certainly is desirable (but should be extended to all displays if used at all). There appears to be no over-riding complications nor restrictions imposed by [REDACTED] concept which would adversely affect the selection of one or several computer types in the future -- (conversely the concept does not seem to be fully aware of the broad scope of service(s) which any one of several G. P. computers could provide to these operating equipments).

3. Comments on Individual Viewing and Audio Communication Components

The following points are noted in regard to the console viewing provisions:

1. As constructed, it would not be practical to expect one screen to serve a battery of (1 to 4) viewers or P.I.'s. They appear to be designed for one P.I. only -- and this is certainly correct, in our opinion.

SEC.

(SAC): In past discussions with testing office personnel
25X1A as well as [REDACTED] et al -- there has been constant and
we feel erroneous reference to the expected use of a
"P.I. Call" for both the P.I.'s work and as a tool for
"Briefings" -- "Briefings" of groups of undefined
numbers of persons. In our opinion, "it will not work";
and if attempted, neither the P.I.'s nor the "briefings"
will be served. One requires precision; the other scale
(large) plus flexibility according to subjects and
persons involved.

2. We question the wisdom of including "teams" in
this equipment.

3. The equipment does not appear to express a "P.I.
team" concept -- If such was the intent or
instructions to [REDACTED] -- other than a "2-man team".
It would not seem wise to go on with equipment
development until a "team-concept" is spelled
out -- or abandoned.

4. Unless a team-concept is basic to future P.I.C.
operations, most of the capabilities provided
in [REDACTED] console are already provided for
(and perhaps more satisfactorily) with existing
individual viewing apparatus (only the "voice
communication" links of present systems are utterly
lacking!)

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3. The suggested "standardizing" on 70 mm. film size would be totally impractical for future and such an imposition could not be accepted.
4. The "target counter" -- if required at all, should display its "total" or other reading on the viewing screen, not on the instrument panel where it now requires a significant and distracting "re-focusing" of the eyes of the operator to use it. (Question its merit).
5. The rear-view projection simply is not satisfactory for the need in our opinion.
6. "Zoom" lens feature should be retained, ('the this will be of much greater significance for Briefing Room Equipment(s) than for any "P.I. cell" in our opinion.
7. Several of the 'controls' and their operation will require evaluation and some de-bugging which can only be proved after sufficient operator experience is observed under essentially "real" and "real-time" conditions, e.g., "brightness control", "distance, location - azimuth", "fast forward, fast return" -- film transport, etc.

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Concerning the "Audio/Communication" Components:

1. The dial telephone instrument does not appear suitable or appropriate and should be eliminated. It should be replaced with some such device as the new Western-Electric (?) 'push-button' model.
2. The 'mike' for recording and taping we believe will be found superfluous for the following one reason alone; -- unless rigid discipline and extensive training are instituted for those using the P.I. console and 'mike', the dittig of tapes for unessential conversation, 'cross-talk', etc. will require more time than if the P.I. wrote his notes originally. (Such "writing" could be done and remotely and simultaneously transmitted by providing the P.I. with the standard "hotel, [redacted] message equipment" manufactured by [redacted]

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C. Comment on Overall Integrated Component Assemblage

As a general comment only, this portion of the work is quite inconclusive. If the tie-ins are anticipated between the P.I.'s Work Console to the Computer and Data Handling Stores, this will require extensive analysis plus "trial and error" study, mainly to insure simplicity and avoidance of unnecessary networks which may never be used.

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Likewise, the inclusion of large back-projection display screens and the use of same (by the P.I.'s -- and not for general briefings), must be clarified. And if used, the image displayed will require 5 to 10 times enhancement over the present display.

The function of the collimated light image display appears worthy of much interest and study of possible uses. (While this may not be original with
25X1A [REDACTED] it is a new concept -- and an interesting one -- as far as this writer is concerned).

All in all, the significance of a proper and detailed plan to integrate any and all units, where appropriate, seems of utmost importance before continued (full) effort is made to develop such units. Such a "plan" will expose the essential need for flexibility in the units and their use and arrangements -- to insure their accommodation to future program material and especially new and different "raw-product" film take.

D. Work Stations and Human Operators

Again only general comment can be given on this most important subject at present.

The observation seems appropriate -- the present "work areas" of the P.I.'s including their own desk-areas and those used "in common" with others from time

to time -- are rather comodious, as far as square footage of floor space is concerned. This does not appear to be accidental but results from the multiple-task effort of the P.I.'s work. These areas may 'appear' unorganized and 'cluttered' at first glance but this is not necessarily the case -- far from it!

In contrast to the room and area now needed or now used by the P.I., the subject P.I. Console 'feels' cramped! And I believe will be found to be so, unless other 'plan-layouts' show the placement and alignment of other work areas required by P.I. work -- This should be explored and explained in a most graphic form!

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As to "work stations" themselves on [REDACTED] console -- they will depend upon which of the units are to be "gauged" basically "gauged", what the particular task is that involves use of the console, and the speed required of the P.I.(s) -- and the total number and assignments of persons involved.

The writer does not feel he has had adequate exposure to the operation plan for use of the console by the P.I. group as a whole -- if such a plan does in fact, spell out this point. If [REDACTED] exposure

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did not provide for such exposure, this criticism should recognise the point, as well as the need for such a plan.

Sooner or later, the "human factors" problems and professional advice on these will be an absolute necessity - in writer's opinion. However, this input need not be a delaying factor; rather, it should move concurrently with any further work.

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E. Other Equipment (Ancillary or per [redacted] Contract).

Some decisions regarding what is of real or exceptional value in the developments so far, will be required at once. It would seem reasonable that the T.D. Board can accomplish this task without delay, leaving questionable items for future development, if at all, while concentrating on those which are obviously in-phase with other plans for I.O./P.A.D. personnel.

F. Comment on Handling of Bulk Material and Copy and projected Collateral.

This portion of the cocaine concept seems to this writer to have been grossly neglected and much more can be done to relieve the man-handling aspects of collateral, if desired. A question does most certainly exist regarding the use of collateral on some random take but where other circumstances prevail -- the bulk loading

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of maps, etc. into a rear view projector (after transport from library by physical means) does not seem to provide sufficient improvement, speed, ease for P.I. or other reasons to justify it; -- rather a "pile of maps" on the table behind plus a place to spread them out -- as is now the case - may be quite sufficient!

It is our opinion that this area still leaves much room for some excellent aids and likely some significant but simple "break-thrus" in the handling of collateral with the accent on "remote display" but without the expectation that it can or will ever be "fully automatic":

C. Integration of Equipment (P.I. Console) with Future Computer(s) and other Automated Elements

(Because this subject is now under study by T.D. Board and in part(s) by others, comment will be presented later.)

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E. Comment on Multiple Configurations of [REDACTED] Console Units

In view of the several references to this subject above -- the need for developing such layouts is commended to the Board's early attention.

The making of such plan-layouts and illustrative perspective sketches need not be delayed because of

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technical design problems of the various pieces of equipment. It can commence at once, -- if not already accomplished by way of the [REDACTED] "Report".

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Block lay-outs should help to clarify many points and questions for many persons.

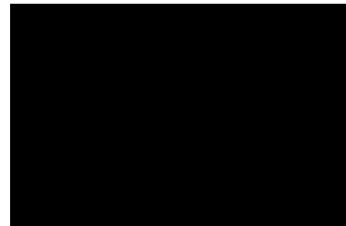
- I. Comment on this [REDACTED] Equipment for Use as "Key" P.I. Console. -- (for next 24 month work-load impact)

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While this final comment seems to be of paramount importance to the entire [REDACTED] effort and the evaluation of it -- the writer includes it here only to offer T.D. Board his feeling of its urgency. If further thoughts from [REDACTED] are desired, we will comply but feel these should be verbal discussions because of our limited knowledge in this area at this time.

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APPENDIX I

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1. Rear view projection unsatisfactory
2. Stereo not desirable
3. People not automatable
4. Team not satisfactory
5. Automatic copy delivery
6. Automatic measurement
7. To be standard size
8. Front projection
9. 2 rolls film
10. 10x in moderate aerial viewer
11. 5x capability in binocular
12. Zoom lens - total up to 40-50x
13. One seat - up to 3 viewers
14. Floating binocular mount
15. Computer selection
16. 1000'/5' 1000' physical capacity
17. Rotational capability (transport) (Question)
(either picture or collateral must be rotatable)
18. Communication capability -- pass back and forth
call library (To FMA this is back and forth)
19. Collateral - 1) pull out center piece, 2) split image,
3) tack collateral on tail end of film
20. Map viewer - slaved cross hairs roll, chip or slide

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21. Report form or key viewer (possibly TV) guide sheet/check off list
(Kodak anti simulation screen) pre load keep

Controls

1. Transport A (fast forward, fast rewind, → one, ← one)
2. XYZ
3. Transport B
4. Stereo mate
5. Pre-selected target control (north up)
6. Frame No.
7. Tat - long readout
8. Cross hair cursor
9. Distance, location, azimuth
10. Distance readout
11. Brightness control
12. Reporting - oral to off line transcription center
13. Communication channels (phone dial)

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